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### (54) SUPERCONDUCTOR DEVICE

(57)Abstract:

PURPOSE: To provide the oxide superconductive film on a heat resistant base board with good superconductivity by forming oxide superconductive film on the base board through a fusion sprayed film.

CONSTITUTION: An oxide superconductive film is formed on a heat resistant base board through a fusion sprayed layer. This base board is made from a heat resistant radial alloy such as Ni, Fe, Co, heat resistant ceramics, etc. First an amount of fusion spray is formed on the base board, and thereover a superconductive film is formed followed by posttreatment. The fusion sprayed layer consists of zirconium oxide, stabilized zirconia, phostelite, cerium etc., having no less than a coefficient of thermal expansion of  $7 \times 10^{-6}/^{\circ}\text{C}$ , which is level with the superconductor. Stabilized zirconia which is hard to react with superconductor shall preferably be used. Any oxide superconductor can be used, as long as it presents superconductivity, but favorable is an oxide superconductor of perovskite structure containing Cu, AE element (Ba, Ca, Sr), and Ln element (Y, La, Sc, Nd, Sm, Eu, Gd, Dy, Ho, Er, Tm, Yb, Lu).

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